

IV.J.6 Direct Methanol Fuel Cell Power Supply for All-Day True Wireless Mobile Computing (New Project)

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Objectives

- Design, fabricate and validate a cost-effective, fully integrated fuel cell system for mobile computing applications.
- Deliver a working integrated fuel cell system for mobile computing applications.

Technical Barriers

This project addresses the following technical barriers from the Fuel Cells section of the Hydrogen, Fuel Cells and Infrastructure Technologies Program Multi-Year Research, Development and Demonstration Plan:

- O. Stack Material and Manufacturing Cost
- P. Durability
- Q. Electrode Performance

Approach

The tasks to accomplish this project will include development of the fuel cell stack technology; design and evaluation of the necessary fuel packaging; and construction, operation, and analysis of the integrated fuel cell system.

PolyFuel will provide fuel cell system development, including proprietary membrane electrode assemblies, stack design, balance-of-plant components, and final direct methanol fuel cell (DMFC) system fabrication and integration with a laptop computer system.

The fuel cells developed in this project will have specific power of 30 W/kg, power density of 30 W/L, energy density of 500 W-h/L, original equipment manufacturer cost less than \$5/W, and at least 1,000 hours of verifiable lifetime. The integrated system will be operated and tested under real-world conditions.